RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.

Application Serial Number:	10/554, 408
Source:	IFWO
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IFWO

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PATENT APPLICATION: US/10/554,408 TIME: 14:05:30

Input Set : A:\2923-737.txt

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3 <110> APPLICANT: Grode, Leander
        Kaufmann, Stefan H.E.
        Raupach, Baerbel
 5
        Hess, Juergen
 6
8 <120> TITLE OF INVENTION: Tuberculosis Vaccine with Improved Efficacy
10 <130> FILE REFERENCE: 2923-737
12 <140> CURRENT APPLICATION NUMBER: 10/554,408
13 <141> CURRENT FILING DATE: 2005-10-24
15 <150> PRIOR APPLICATION NUMBER: PCT/EP04/004345
16 <151> PRIOR FILING DATE: 2004-04-23
18 <150> PRIOR APPLICATION NUMBER: 60/464,644
19 <151> PRIOR FILING DATE: 2003-04-23
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38 1
               - 5
40 atc ggc acg gca gcg gct gta gtc ctt ccg ggc ctg gtg ggg ctt gcc
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41 Ile Gly Thr Ala Ala Ala Val Val Leu Pro Gly Leu Val Gly Leu Ala
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                                   25
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44 ggc gga gcg gca acc gcg ggc gcg ttc tcc cgg ccg ggg ctg ccg gtc
45 Gly Gly Ala Ala Thr Ala Gly Ala Phe Ser Arg Pro Gly Leu Pro Val
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                                                                         192
48 gag tac ctg cag tct gca aag caa tcc gct gca aat aaa ttg cac tca
49 Glu Tyr Leu Gln Ser Ala Lys Gln Ser Ala Ala Asn Lys Leu His Ser
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52 gca gga caa agc acg aaa gat gca tct gca ttc aat aaa gaa aat tca
                                                                         240
53 Ala Gly Gln Ser Thr Lys Asp Ala Ser Ala Phe Asn Lys Glu Asn Ser
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56 att tea tee atg gea eea eea gea tet eeg eet gea agt eet aag aeg
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57 Ile Ser Ser Met Ala Pro Pro Ala Ser Pro Pro Ala Ser Pro Lys Thr
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60 cca atc gaa aag aaa cac gcg gat gaa atc gat aag tat ata caa gga
                                                                         336
61 Pro Ile Glu Lys Lys His Ala Asp Glu Ile Asp Lys Tyr Ile Gln Gly
62
               100
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RAW SEQUENCE LISTING DATE: 02/21/2007 PATENT APPLICATION: US/10/554,408 TIME: 14:05:30

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				Pro		_					_			_				132
70	TIIL	130	vai	FIO	FIO	Arg	135	GLY	TYL	шуз	пор	140	ASII	GIU	- y -	116		
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				Asn														
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		-		Ser														
86		-	195					200		-			205					•
88.	caa	qac	aat,	aaa	atc	qtt	qta	aaa	aat	qcc	act.	aaa.	tca.	aac	gtţ	aac		672
				Lys													• .	
90		210		-			215	-				220						
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93	Asn	Āla	Val	Asn	Thr	Leu	Val	Glu	Arg	Trp	Asn	Glu	Lys	Tyr	Ala	Gln		
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97	Ala	Tyr	${\tt Pro}$	Asn	Val	Ser	Ala	Lys	Ϊle	Asp	Tyr	Asp	Asp	Glu	Met	Ala		
98					245					250					255			
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101	. Tyr	Sei	: Glu	ı Ser	Glr	ı Lev	ı Ile	Ala	Lys	s Phe	e Gly	y Thi	r Ala	a Phe	Lys	: Ala		
102				260					265					270				
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RAW SEQUENCE LISTING DATE: 02/21/2007
PATENT APPLICATION: US/10/554,408 TIME: 14:05:30

Input Set : A:\2923-737.txt

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	aat Asn					_	_						_		_	_	1200
	385	261	Ser	FIIC	цуъ	390	vaı	116	ıyı	Gry	395	Ser	AIA	цуз	лар	400	
	gtt	422	a+ a	ato	~~~		220	ata	aaa	asa.		cac	ast	att	tta		1248
	Val																1240
	Val				405	OLY	no	шси	OL y	410	ДСИ,		23012				
	aaa					aat.	cga	gaa	aca		gga	att	ccc				1296
	Lys																
142	-1-	1		420			3		425		2			430		-	
	aca	aca	aac		cta	aaa	qac	aat	qaa	tta	qct	gtt	att	aaa	aac	aac	1344
	Thr						_		_		-	_					
146			435			•	-	440					445	-			
148	tca	gaa	tat	att	gaa	aca	act	tca	aaa	gct	tat	aca	gat	gga	aaa	att	1392
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153	Asn	Ile	qaA	His	Ser	Gly	Gly	Tyx	Val	Ala						Tmp	• •
154	465					470			• •		475	• • • •	***	ot: ^ '-	٠,	480	
	gat																1488
157	Asp	Glu	Val	Asn	-	Asp	Pro	Glu	Gly		Glu	Ile	Val	Gln		Lys	
158					485					490					495		
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162				500					505					510			1504
	atc																1584
	Ile	Tyr		Pro	GIY	Asn	Ala	520	ASI	тте	ASII	vaı	525	Ата	ьуѕ	Giu	
166	tgc	3.at	515	++=	aat	taa	~ 22		taa	202	200	at a		aat	asa	caa	1632
	Cys																1032
170	Cys	530	GLY	шси	niu	111	535	111	115	9	****	540		шър	1100	9	
	aac		cca	ctt	ata	aaa		aga	aat	atc	t.cc		taa	aac	acc	acq	1680
	Asn																
	545					550					555		-	•		560	
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	Leu																
178		-		-	565			_		570	•				575		
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The Ash Ser His Ser Thr Lys Val Lys Ala Ala Phe Asp Ala Ala Val 355 360 365 365 365 365 365 365 365 365 365 365 365 365 365 365 365 365 360 375 370 375 380 380 380 380 380 380 380 380 380 380 380 380 390 390 390 390 390 390 390 390 390 410 410 415	289				340					345					350		
Ser Gly Lys Ser Val Ser Gly Asp Val Glu Leu Thr Asp Ile Lys Lys Ser Val Ser Ser	292	Thr	Asn	Ser	His	Ser	Thr	Lys		Lys	Ala	Ala	Phe		Ala	Ala	Val
370										_							_
300 Asn Ser Ser Phe Lys Ala Val Ile Tyr Gly Gly Ser Ala Lys Asp Glu 301 385 308 Lys Gly Ala Thr Phe Asn Arg Glu Thr Pro Gly Val Pro Ile Ala Tyr 309 420 312 Thr Thr Asn Phe Leu Lys Asp Asn Glu Leu Ala Val Ile Lys Asn Asn 313 435 320 Asn Ile Asp His Ser Gly Gly Tyr Val Ala Gln Phe Asn Ile Ser Trp 321 465 322 Asp Glu Val Asn Tyr Asp Pro Glu Gly Asp Glu Thr Pro Asn Ile Ser Trp 324 Asp Glu Val Asn Tyr Asp Pro Glu Gly Asn Glu Ile Val Gln His Lys 325 485 326 Asn Trp Ser Glu Asn Asn Lys Ser Lys Leu Ala His Phe Thr Ser Ser 329 500 320 Asn Ile Tyr Leu Pro Gly Asn Ala Arg Asn Ile Asn Val Tyr Ala Lys Glu 333 515 336 Cys Thr Gly Leu Ala Trp Glu Trp Trp Asp Thr Val Ile Asp Asp Arg 337 530 340 Asn Leu Pro Lys Tyr Ser Asn Lys Val Asp Asn Pro Ile Glu Tyr Ala 345 346 Leu Ala Tyr Gly Ser Gln Gly Asp Leu Asn Pro Leu Ile Asp Asp 347 580 348 Leu Ala Tyr Gly Ser Ala Ala Ala Val Leu Ser Ser Leu Thr Ser Lys Leu 353 585 348 Leu Ala Tyr Gly Ser Ala Ala Arg Arg Gly Ser Gly Ile Arg Ser Leu Ser Met 357 610 356 Ser Thr	296	Ser	_	Lys	Ser	Val	Ser		Asp	Val	Glu	Leu		Asn	Ile	Ile	Lys
301 385			_		_										_	_	
304 Val Gln Ile Ile Asp Gly Asn Leu Gly Asp Leu Arg Asp Ile Leu Lys 305				Ser	Phe	Lys		Val	Ile	Tyr	Gly		Ser	Ala	Lys		
305									_	~7	_		•		-1-		•
308 Lys Gly Ala Thr Phe Asn Arg Glu Thr Pro Gly Val Pro He Ala Tyr Alo 420 420 425		Val	Gin	TIE.	Tie	_	GIĀ	Asn	Leu	GIY		ьeu	Arg	Asp	тте		гув
309		•	a 1	77-	mla sa		7	7	~1	mb ~		C1	17-1	Dro	T10		Фът~
312 Thr Thr Asn Phe Leu Lys Asp Asn Glu Leu Ala Val Ile Lys Asn Asn 313		-	GIY	Ala		Pne	ASII	Arg	GIU		PIO	Gry	vai	PIO		AIA	ıyı
313			Thr	Λan		Lou	Larg	Acn	Λen		T.011	Δla	Val	Tle		Δan	Asn
316 Ser Glu Tyr Ile Glu Thr Thr Ser Lys Ala Tyr Thr Asp Gly Lys Ile 317			1111		FIIC	шеа	цуБ	пор		OIU	шси	71	vul		_,_	••••	11011
317 450 12 Asp His Ser Gly Gly Tyr Val Ala Gln Phe Asn Ile Ser Trp 320 Asn Ile Asp His Ser Gly Gly Tyr Val Ala Gln Phe Asn Ile Ser Trp 321 465 65 670 470 675 475 675 480 324 Asp Glu Val Asn Tyr Asp Pro Glu Gly Asn Glu Ile Val Gln His Lys 485 490 495 495 328 Asn Trp Ser Glu Asn Asn Asn Lys Ser Lys Leu Ala His Phe Thr Ser Ser 500 505 505 510 332 Ile Tyr Leu Pro Gly Asn Ala Arg Asn Ile Asn Val Tyr Ala Lys Glu 525 510 525 333 515 525 525 525 525 336 Cys Thr Gly Leu Ala Tyr Gly Ser Sor 535 525 525 525 340 Asn Leu Pro Leu Val Lys Asn Arg Asn Ile Ser Ile Trp Gly Thr Thr 540 540 540 550 344 Leu Tyr Pro Lys Tyr Ser Asn Lys Val Asp Asn Pro Ile Glu Tyr Ala Ser Sor 570 575 560 344 Leu Tyr Pro Lys Tyr Ser Asn Lys Leu Ser Ser Leu Thr Ser Lys Leu Ser Sor 590 575 575 348 Leu Ala Tyr Gly Ser Gln Gly Asp Leu Asn Pro Leu Ile Asn Glu Ile Ser Lys Leu Ser Sor 590 590			Glu		Tle	Glu	Thr	Thr		Lvs	Ala	Tvr	Thr		Glv	Lvs	Ile
320 Asn Ile Asp His Ser Gly Gly Tyr Val Ala Gln Phe Asn Ile Ser Trp 321 465				-1-						-1-		2 -			4	4	
321 465 470 475 480 324 Asp Glu Val Asn Tyr Asp Pro Glu Gly Asn Glu Ile Val Gln His Lys 485 490 495 328 Asn Trp Ser Glu Asn Asn Lys Ser Lys Leu Ala His Phe Thr Ser Ser 500 505 510 332 Ile Tyr Leu Pro Gly Asn Ala Arg Asn Ile Asn Val Tyr Ala Lys Glu 510 520 525 336 Cys Thr Gly Leu Ala Trp Glu Trp Trp Arg Thr Val Ile Asp Asp Arg 525 525 340 Asn Leu Pro Leu Val Lys Asn Arg Asn Ile Ser Ile Trp Gly Thr Thr 540 341 545 550 550 555 560 344 Leu Tyr Pro Lys Tyr Ser Asn Lys Val Asp Asn Pro Ile Glu Tyr Ala 565 570 575 348 Leu Ala Tyr Gly Ser Gln Gly Asp Leu Asn Pro Leu Ile Asn Glu Ile 580 585 590 352 Ser Lys Ile Ile Ser Ala Ala Val Leu Ser Ser Leu Thr Ser Lys Leu 590 353 595 600 605 356 Pro Ala Glu Phe Val Arg Arg Gly Ser Gly Ile Arg Ser Leu Ser Met 357 610 615 620				Asp	His	Ser	Gly	Gly	Tyr	Val	Ala	Gln	Phe	Asn	Ile	Ser	Trp
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328 Asn Trp Ser Glu Asn Asn Lys Leu Ala His Phe Thr Ser Ser 329 500 500 505 505 510 520 525 533 525 535 525 535 540 545 535 540 545 550 555 555 550 555 550 555 550 550 555 550 555 550 575 575 540 541 541 5	324	Asp	Glu	Val	Asn	Tyr	Asp	Pro	Glu	Gly	Asn	Glu	Ile	Val	Gln	His	Lys
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353 595 600 605 356 Pro Ala Glu Phe Val Arg Arg Gly Ser Gly Ile Arg Ser Leu Ser Met 357 610 615 620 360 Ser Thr	329 332 333 336 337 340 341 344 345 348	Ile Cys Asn 545 Leu	Tyr Thr 530 Leu Tyr	Leu 515 Gly Pro	500 Pro Leu Leu Lys Gly	Gly Ala Val Tyr 565	Asn Trp Lys 550 Ser	Ala Glu 535 Asn Asn	Arg 520 Trp Arg	505 Asn Trp Asn Val Leu	Ile Arg Ile Asp 570	Asn Thr Ser 555 Asn	Val Val 540 Ile Pro	Tyr 525 Ile Trp Ile	510 Ala Asp Gly Glu Asn	Lys Asp Thr Tyr 575	Glu Arg Thr 560 Ala
357 610 615 620 360 Ser Thr	329 332 333 336 337 340 341 345 348 349	Ile Cys Asn 545 Leu Leu	Tyr Thr 530 Leu Tyr	Leu 515 Gly Pro Pro	500 Pro Leu Leu Lys Gly 580	Gly Ala Val Tyr 565 Ser	Asn Trp Lys 550 Ser Gln	Ala Glu 535 Asn Asn	Arg 520 Trp Arg Lys	505 Asn Trp Asn Val Leu 585	Ile Arg Ile Asp 570 Asn	Asn Thr Ser 555 Asn Pro	Val 540 Ile Pro Leu	Tyr 525 Ile Trp Ile	Asp Gly Glu Asn 590	Lys Asp Thr Tyr 575 Glu	Glu Arg Thr 560 Ala
357 610 615 620 360 Ser Thr	329 332 333 336 337 340 341 344 345 348 349 352	Ile Cys Asn 545 Leu Leu Ser	Tyr Thr 530 Leu Tyr	Leu 515 Gly Pro Pro Tyr	500 Pro Leu Leu Lys Gly 580	Gly Ala Val Tyr 565 Ser	Asn Trp Lys 550 Ser Gln	Ala Glu 535 Asn Asn	Arg 520 Trp Arg Lys Asp Val	505 Asn Trp Asn Val Leu 585	Ile Arg Ile Asp 570 Asn	Asn Thr Ser 555 Asn Pro	Val 540 Ile Pro Leu	Tyr 525 Ile Trp Ile Ile Thr	Asp Gly Glu Asn 590	Lys Asp Thr Tyr 575 Glu	Glu Arg Thr 560 Ala
	329 332 333 336 337 340 341 344 345 348 349 352 353	Ile Cys Asn 545 Leu Leu Ser	Tyr Thr 530 Leu Tyr Ala Lys	Leu 515 Gly Pro Pro Tyr Ile 595	Leu Leu Lys Gly 580 Ile	Gly Ala Val Tyr 565 Ser Ser	Asn Trp Lys 550 Ser Gln Ala	Ala Glu 535 Asn Asn Gly Ala	Arg 520 Trp Arg Lys Asp Val 600	Trp Asn Val Leu 585 Leu	Ile Arg Ile Asp 570 Asn Ser	Asn Thr Ser 555 Asn Pro	Val Val 540 Ile Pro Leu Leu	Tyr 525 Ile Trp Ile Ile Thr 605	Asp Gly Glu Asn 590 Ser	Lys Asp Thr Tyr 575 Glu Lys	Glu Arg Thr 560 Ala Ile Leu
361 625	329 332 333 336 337 340 341 345 348 349 352 353 356	Ile Cys Asn 545 Leu Leu Ser	Tyr Thr 530 Leu Tyr Ala Lys Ala	Leu 515 Gly Pro Pro Tyr Ile 595	Leu Leu Lys Gly 580 Ile	Gly Ala Val Tyr 565 Ser Ser	Asn Trp Lys 550 Ser Gln Ala	Ala Glu 535 Asn Asn Gly Ala Arg	Arg 520 Trp Arg Lys Asp Val 600	Trp Asn Val Leu 585 Leu	Ile Arg Ile Asp 570 Asn Ser	Asn Thr Ser 555 Asn Pro	Val Val 540 Ile Pro Leu Leu Arg	Tyr 525 Ile Trp Ile Ile Thr 605	Asp Gly Glu Asn 590 Ser	Lys Asp Thr Tyr 575 Glu Lys	Glu Arg Thr 560 Ala Ile Leu
	329 332 333 336 337 340 341 344 345 348 349 352 353 356 357 360	Ile Cys Asn 545 Leu Leu Ser Pro	Tyr Thr 530 Leu Tyr Ala Lys Ala 610	Leu 515 Gly Pro Pro Tyr Ile 595	Leu Leu Lys Gly 580 Ile	Gly Ala Val Tyr 565 Ser Ser	Asn Trp Lys 550 Ser Gln Ala	Ala Glu 535 Asn Asn Gly Ala Arg	Arg 520 Trp Arg Lys Asp Val 600	Trp Asn Val Leu 585 Leu	Ile Arg Ile Asp 570 Asn Ser	Asn Thr Ser 555 Asn Pro	Val Val 540 Ile Pro Leu Leu Arg	Tyr 525 Ile Trp Ile Ile Thr 605	Asp Gly Glu Asn 590 Ser	Lys Asp Thr Tyr 575 Glu Lys	Glu Arg Thr 560 Ala Ile Leu

VERIFICATION SUMMARY

DATE: 02/21/2007

PATENT APPLICATION: US/10/554,408

TIME: 14:05:31

Input Set : A:\2923-737.txt